Amendments to the Claims:

This Amendment version is based on the Last Presented Amendment of 12-5-2005, and to follow the Examiner's proposed allowable claim amendments and the telephone Discussion of 4-17-2006 with the SPE, as follows to place it in condition for allowance.

This listing of claims will replace all prior versions, and listings, of claims in the application:

CLAIMS

What I claim as my invention is:

1 – 20. (canceled)

21. (currently amended) A drawing process for producing an optical fiber comprising the steps of:

measuring either the outer diameter or shape of a preform;

feeding said preform at a feeding speed into a furnace to heat and melt said preform;

heating and melting said preform for said optical fiber;

while heating and melting, drawing said optical fiber from said preform at a drawing speed ~~under tension~~ to form said optical fiber;

measuring the outer diameter of said optical fiber at a position below the furnace;

providing a control system with the measured outer diameter or shape of said preform , the measured outer diameter of said optical fiber, a predetermined ~~nominal~~ preform value and a predetermined ~~nominal~~ fiber value for controlling said drawing process,

wherein the control system controls

the feeding speed of said preform and the drawing speed of said optical fiber;

whereby said optical fiber drawing process is robustly controlled ~~with robust performance of said process and robust quality of said optical fiber~~ against deviations of the preform outer diameter or shape at different locations and against deviations of various preforms~~, making a robust diameter-controlled optical fiber~~.

22. (currently amended) The drawing process as claimed in claim 21, wherein the measurement of said preform outer diameter or shape is on-line by a measurement monitor device;

the measured diameter or shape is on-line real-time fed to said control system; and

said control system generates a control signal based on the measured preform diameter or shape , its deviation from the predetermined ~~nominal~~ preform value, and said ~~nominal~~ predetermined preform value,

for controlling said process in face of the deviation of the preform diameter or shape.

23. (canceled)

24. (currently amended) The process as claimed in claim 21, further including the steps of:

generating control signals based on the preform measurement, the fiber measurement, the deviation of the preform measurement from the predetermined ~~nominal~~ preform value, the deviation of the fiber measurement from the predetermined ~~nominal~~ fiber value, the predetermined ~~nominal~~ preform value and the predetermined ~~nominal~~ fiber value, for said optical fiber drawing process control~~;~~ to control the feeding speed of said preform and the drawing speed of said optical fiber.

~~whereby further to maintain the robust performance of said drawing process and to provide the robust quality of said optical fiber in presence of the deviations of said outer diameter or shape of said preform.~~

25. (currently amended) The process as claimed in claim ~~21~~ 24,

wherein the position of measuring the optical fiber is at a position at which shrinkage of the outer diameter of said optical fiber is not larger than a predetermined allowable diameter deviation value of said optical fiber~~;~~.

~~said control system generates control signals to control the drawing speed of said fiber from the melting preform and the feeding speed of said preform into the furnace, based on the measured preform outer diameter or shape , its deviation from the predetermined nominal preform value, said predetermined nominal preform value, the measured optical fiber outer diameter, its deviation from the predetermined nominal fiber value, and said predetermined nominal fiber value; and~~

~~the drawing process being carried out at said drawing speed and said feeding speed .~~

26. (currently amended) A drawing process for producing an optical fiber comprising the steps of:

heating and melting a preform in a furnace for the optical fiber;

while heating and melting, drawing said optical fiber from said preform ~~under tension~~ to form said optical fiber;

measuring the outer diameters of said optical fiber, which is bare before coating, at two or more different locations by respective measurement devices before the coating,

wherein a first location is close to the furnace, and

a second location is below the first location, at this second location shrinkage of the outer diameter of said optical fiber, while stretched under the drawing, is not larger than a predetermined allowable bare fiber diameter deviation value of said optical fiber, or immediately before the coating;

coating said optical fiber;

providing a control system with the measurement data from all these measurement devices respectively at the different locations,

wherein said control system

has a first preselected ~~nominal~~ value for the measurement data from the first measurement location, and a second different preselected ~~nominal~~ value that is less than the first preselected value for the measurement data from the second measurement location,

calculates the deviation of the measurement of the first measurement location from the first

preselected ~~nominal~~ value, and the deviation of the measurement of the second measurement location from the second preselected ~~nominal~~ value, and

~~dynamically~~ controls a fiber drawing speed and a preform feeding speed for the drawing process based on the calculated deviations ;

whereby to ~~maintain~~ robustly control~~ed performance of~~ said optical fiber drawing process ~~and robust quality of said optical fiber~~ by the double ~~monitoring the changes~~ measurements of the bare fiber diameters from said measurement devices.

27 – 36. (canceled)

37. (new) A control method for an optical fiber drawing process control including the steps of:

measuring a preform outer diameter by a measurement device before a heating and melting stage;

feeding the measured preform at a feeding speed into a furnace in the heating and melting stage;

while heating and melting said preform, drawing said optical fiber from said preform at a drawing speed to change the geometrical size of said preform to form said optical fiber which is a bare optical fiber before coating;

measuring said bare optical fiber by a first outer diameter measurement device located after said furnace to provide a first bare fiber diameter measurement;

measuring said bare optical fiber by a second outer diameter measurement device located after said first outer diameter measurement device and above a coating device to provide a second bare fiber diameter measurement;

coating said bare optical fiber in said coating device;

providing the preform outer diameter measurement and the first and second bare fiber diameter measurements into a control system which controls said feeding speed of said preform into the furnace in the heating and melting stage and said drawing speed of said fiber;

calculating a preform diameter deviation of the measured preform diameter from a preselected preform diameter value, and a first bare fiber diameter deviation of the first measured bare fiber diameter from a first preselected bare fiber diameter value;

calculating a second bare fiber diameter deviation of the second measured bare fiber diameter from a second preselected bare fiber diameter value which is less than the first preselected bare fiber diameter value;

generating control signals based on the preform diameter deviation, the first bare fiber diameter deviation and the second bare fiber diameter deviation for said optical fiber drawing process control; and

adjusting the feeding speed of said preform and the drawing speed of said fiber according to said control signals.

38. (new) The control method in claim 37, wherein

said control signals are further based on the measured preform diameter and the preselected preform diameter.

39. (new) The control method in claim 38, wherein

the preform measurement device is located immediately above the furnace;

the first outer diameter measurement device of said bare fiber is located immediately after said furnace;

the second outer diameter measurement device of said bare fiber is located immediately above the coating device;

said control signals are further based on the first measured bare fiber diameter, the first preselected bare fiber diameter, the second measured bare fiber diameter and the second preselected bare fiber diameter.